

REMARKS

The substitute Sequence Listing includes sequences recited in claims 9, 31, 41, and 54, mentioned by the Examiner in the Office communication, dated July 30, 2001, and Notice of Abandonment, mailed January 16, 2002. The Specification has been amended to include sequence identification numbers for sequences presented in Table 5 and in the forementioned claims.

Attached hereto is a marked-up version of the changes made to the Specification and Claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

The undersigned hereby states that the computer-readable form copy (CRF copy) of the substitute Sequence Listing and the paper copy of the substitute Sequence Listing, submitted in accordance with 37 C.F.R. § 1.825(a) and (b), respectively, are the same and contain no new matter. Accordingly, entry of the substitute Sequence Listing into the above-captioned case is respectfully requested.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing Docket No. 399632000820. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

Dated: February 19, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

Table 5 has been amended as follows:

Peptide	AA	Sequence	<u>SEQ ID NO</u>	Antigen	Protein or Molecule	1 st Position	A*0201
1317.02	8	ALPPVAPV	<u>107</u>	P53		69	0.0230
1317.11	11	LLPENNVLSPPV	<u>108</u>	P53		25	0.1300
F136.02	9	SLYNTITVL	<u>109</u>	HIV	gag	77	0.0330
F136.03	9	SLYNTISVL	<u>110</u>	HIV	gag	77	0.0190
F136.04	9	SLYNTVSTL	<u>111</u>	HIV	gag	77	0.0320
32.0005	9	AIYGRPVS	<u>112</u>	KSHV		508	0.0560
32.0006	9	ALIGTMCGI	<u>113</u>			237	0.1500
32.0008	9	ATLGTVILL	<u>114</u>	KSHV		8	0.0280
32.0016	9	FIALNLSFI	<u>115</u>	KSHV		624	0.0640
32.0017	9	FIQNIDFKA	<u>116</u>	KSHV		631	0.1400
32.0019	9	FLNSSNLFT	<u>117</u>	KSHV		560	0.0780
32.0021	9	FLYVVCSLA	<u>118</u>	KSHV		2	1.1000
32.0022	9	FVAHVHVPDV	<u>119</u>	KSHV		8	0.2600
32.0027	9	GILGTIIFA	<u>120</u>	KSHV		244	0.0270
32.0033	9	HLDFWHHEV	<u>121</u>	KSHV		168	0.2400
32.0042	9	ITATFTAPL	<u>122</u>	KSHV		342	0.1300
32.0050	9	LLGTWMFSV	<u>123</u>	KSHV		53	1.5000
32.0053	9	LMWYELSKI	<u>124</u>	KSHV		492	0.0670
32.0060	9	MIIIVIAII	<u>125</u>	KSHV		738	0.0150
32.0066	9	NLLDRLLLI	<u>126</u>	KSHV		77	0.0290
32.0073	9	RIFYNILEI	<u>127</u>	KSHV		20	0.0800
32.0074	9	RLASSVFDL	<u>128</u>	KSHV		649	0.0670
32.0076	9	RLGAIPPLV	<u>129</u>	KSHV		24	0.0150
32.0078	9	RLYQASAVM	<u>130</u>	KSHV		4	0.0180

Peptide	AA	Sequence	<u>SEQ ID NO</u>	Antigen	Protein or Molecule	1 st Position	A*0201
32.0081	9	SILGCDVSV	<u>131</u>	KSHV		226	0.0430
32.0087	9	SVDFYQFRV	<u>132</u>	KSHV		59	0.0160
32.0088	9	SVSDFDLRI	<u>133</u>	KSHV		245	0.0120
32.0090	9	TLGTVILLV	<u>134</u>	KSHV		9	0.0830
32.0099	9	YLVWQPMSA	<u>135</u>	KSHV		398	0.0130
32.0114	10	AAVEQILTSV	<u>136</u>	KSHV		237	0.0210
32.0118	10	ALIGTMCGIL	<u>137</u>	KSHV		237	0.0120
32.0120	10	ATLGTVILLV	<u>138</u>	KSHV		8	0.0690
32.0124	10	FLYVVCSLAV	<u>139</u>	KSHV		2	0.2400
32.0127	10	GALPICSFVV	<u>140</u>	KSHV		27	0.0160
32.0137	10	KLLGTWMFSV	<u>141</u>	KSHV		52	1.6000
32.0148	10	OLASILGCDV	<u>142</u>	KSHV		223	0.0160
32.0150	10	RLSNRICFWA	<u>143</u>	KSHV		164	0.0130
32.0154	10	SLVTGFINFI	<u>144</u>	KSHV		720	0.0210
32.0159	10	VLATDVTSFL	<u>145</u>	KSHV		149	0.0190
32.0160	10	VLLNGWRWRL	<u>146</u>	KSHV		16	0.2800
32.0164	10	YLVWQPMSAI	<u>147</u>	KSHV		398	0.0230
34.0006	8	QLAKTCPV	<u>148</u>	P53		136	0.0110
34.0132	9	ALBRWGLLV	<u>149</u>	HER2/ neu		5	0.0960
34.0133	9	ALCRWGLLV	<u>150</u>	HER2/ neu		5	0.0360
34.0134	9	AMCRWGLLV	<u>151</u>	HER2/ neu		5	0.0280
34.0135	9	KLFGSLAFL	<u>152</u>	HER2/ neu		369	0.1200
34.0136	9	KLFGSLAFV	<u>153</u>	HER2/ neu		369	0.0900
34.0137	9	KMFGSLAFL	<u>154</u>	HER2/ neu		369	0.2000
34.0138	9	KMFGSLAFV	<u>155</u>	HER2/ neu		369	0.1200
34.0140	9	KMFBQLAKV	<u>156</u>	P53		132	0.0980

Peptide	AA	Sequence	SEQ ID NO	Antigen	Protein or Molecule	1 st Position	A*0201
34.0141	9	KMFCQLAKV	<u>157</u>	p53		132	0.0400
34.0199	10	RMPEAAPPVV	<u>158</u>	p53		65	0.0340
34.0201	10	ALNKMFCQLV	<u>159</u>	p53		129	0.0240
35.0031	9	VLLVSLGAI	<u>160</u>	Flu	HEMA	542	0.0170
35.0034	9	LLTEVETPI	<u>161</u>	Flu	VMT2	3	0.2100
35.0036	9	RLIQNSLTI	<u>162</u>	Flu	VNUC	55	0.0300
35.0040	9	KMNIQFTAV	<u>163</u>	Flu	HEMA	402	0.0330
35.0046	10	GLFGAIAGFI	<u>164</u>	Flu	HEMA	345	0.0451
35.0047	10	KLESMGIYQI	<u>165</u>	Flu	HEMA	521	0.0120
35.0048	10	SLPFQNIHPV	<u>166</u>	Flu	HEMA	306	0.0520
37.0013	8	ALPPVAPV	<u>167</u>	p53		69	0.0500
37.0015	9	ALNKMFCQV	<u>168</u>	p53		129	0.0770
37.0017	9	KLFCQLAKV	<u>169</u>	p53		132	0.0640
37.0018	9	KLCPVQLWV	<u>170</u>	p53		139	0.0440
37.0019	9	CLTIHYNV	<u>171</u>	p53		229	0.0110
37.0032	10	ALNKMFCQLV	<u>172</u>	p53		129	0.0150
37.0033	10	VLVPYEPPEV	<u>173</u>	p53		216	0.1100
37.0034	10	RLPEAAPPVV	<u>174</u>	p53		65	0.0350
37.0035	10	LLPPQHLIRV	<u>175</u>	p53		188	0.0120
37.0069	11	ILLEDSSGNLV	<u>176</u>	p53		255	0.0590
F124.03	10	KLVALGINAV	<u>177</u>	HCV	NS3	1406	0.0110
F124.04	9	SLMAFTAAV	<u>178</u>	HCV	NS4	1789	0.1900
F124.06	9	CINGVCWTV	<u>179</u>	HCV	NS3	1073	0.0910
F124.08	9	TISGVLWQV	<u>180</u>	HCV	NS3	1073	0.1400
F124.09	9	SISGVLWQV	<u>181</u>	HCV	NS3	1073	0.1400
F124.10	9	SLMAFTASV	<u>182</u>	HCV	NS4	1789	0.1200
F124.11	9	GLRDCTMLV	<u>183</u>	HCV	NS5	2727	0.0120
F124.12	10	KLVALGVNAV	<u>184</u>	HCV	NS3	1406	0.0200
F124.14	10	KLSGLGLNAV	<u>185</u>	HCV	NS3	1406	0.0170
F124.23	10	KLVSLGVNAV	<u>186</u>	HCV	NS3	1406	0.0150
F127.03	10	LLALLSCLTV	<u>187</u>	HCV	Core	178	0.0240

Peptide	AA	Sequence	<u>SEQ ID NO</u>	Antigen	Protein or Molecule	1 st Position	A*0201
F127.06	9	LLCPAGHAV	<u>188</u>	HCV	NS3	1169	0.0140
F127.07	10	KLVALGINAV	<u>189</u>	HCV	NS3	1406	0.0700
F127.08	9	SLMAFTAAV	<u>190</u>	HCV	NS4	1789	6.5000
F127.09	9	LLFNILGWV	<u>191</u>	HCV	NS4	1807	1.7000

In the Claims:

Claims 9, 31, 41, and 54 have been amended as follows:

9. (Amended) A method of inducing an immune response with a peptide comprising an epitope consisting of about 8-11 residues (SEQ ID NOS: 192, 193, 194, 195) that will bind to an HLA-A2.1 molecule and induce an HLA-A2.1-restricted cytotoxic T cell response, said method comprising steps of:

providing a peptide comprising a putative T cell epitope, said putative epitope comprising a structural motif associated with peptide binding to HLA-A2.1, said structural motif comprising a first anchor amino acid at position two from an N-terminus of the epitope, said first anchor selected from the group consisting of V, A, and T, and a second anchor amino acid selected from the group consisting of L, I, V, M and A at a carboxyl-terminus of the epitope, said peptide connected to another molecule to create a compound with a *proviso* that neither said peptide, said another molecule nor said compound comprise an entire native antigen;

complexing the provided peptide, or a fragment thereof which comprises the epitope, with and HLA molecule; and,

contacting a cytotoxic T lymphocyte (CTL) with the complex, whereby a CTL response is induced.

31. (Amended) A method of inducing an immune response, said method comprising steps of:

obtaining a peptide comprising an epitope (SEQ ID NOS: 192, 193, 194, 195) that comprises an amino acid V, A, or T at a position two relative to an amino terminus of the epitope,

and L, I, V, M, or A at a carboxyl terminus of the epitope, wherein said peptide comprises a binding affinity for an HLA-A2.1 molecule such that a ratio of an IC_{50} of a standard peptide to an IC_{50} of the peptide is at least 0.01, said peptide connected to another molecule to create a compound, with a *proviso* that neither the obtained peptide, the another molecule nor the compound comprise an entire native antigen;

complexing the peptide with an HLA molecule; and,

contacting a cytotoxic T lymphocyte (CTL) with the peptide-HLA complex, whereby a CTL response is induced.

41. (Amended) A method of inducing a human immune response *in vivo* with a peptide comprising an epitope (SEQ ID NOS: 192, 193, 194, 195) consisting of about 8-1 residues that will bind to an HLA-A2.1 molecule and induce an HLA-A2.1-restricted cytotoxic T cell response, said method comprising steps of:

providing a therapeutically effective human dose of a peptide comprising a putative T cell epitope and a pharmaceutical carrier, said putative epitope comprising a structural motif associated with peptide binding to HLA-A2.1, said structural motif comprising a first anchor amino acid at position two from an N-terminus of the epitope, said first anchor selected from the group consisting of V, A, and T, and a second anchor amino acid selected from the group consisting of L, I, V, M, and A at a carboxyl-terminus of the epitope, with a *proviso* that said peptide does not comprise an entire native antigen;

complexing the provided peptide, or a fragment thereof which comprises the epitope, with an HLA molecule *in vivo* in a human; and,

contacting a cytotoxic T lymphocyte (CTL) with the complex *in vivo* in a human, whereby a CTL response is induced.

54. (Amended) A method of inducing a human immune response *in vivo*, said method comprising steps of:

providing a therapeutically effective human dose of a peptide in a pharmaceutical carrier, said peptide comprising an epitope (SEQ ID NOS: 192, 193, 194, 195) that comprises an amino acid V, A, or T at a position two relative to an amino terminus of the peptide comprises a binding affinity such that the ratio of an IC_{50} of the peptide is at least 0.01, with a *proviso* that an obtained peptide is not an entire native antigen;

complexing the peptide with an HLA molecule *in vivo* in a human; and,

contacting a cytotoxic T lymphocyte (CTL) with the peptide-HLA complex *in vivo* in a human, whereby a CTL response is induced.